

Claims

1. Device for performing medical interventions (operations) on the human or animal body, with

a device (18) for storing first image data in regard to the area to be operated on and

a device (22) for displaying image data,

characterized by

an image-generating device (20) for obtaining second image data of the area to be operated on during the operation, and

an updating device (10, 12), which is configured to compare second image data obtained at a first point in time to second image data obtained at a second point in time that is after the first point in time, to update the first image data, in accordance with the changes resulting from the comparison, and to supply the updated first image data to the display device (22).

2. Device according to claim 1, characterized in that the updating device (10, 12) updates the first image data at predetermined time intervals.

3. Device according to claim 1, characterized in that the updating device (10, 12) updates the first image data always when the changes resulting from the comparison surpass a predetermined limit.

4. Device according to one of the preceding claims, characterized by a surgical robot (24) which is configured to carry out manually input commands while taking into account the updated first image data and/or to perform automatically at least one operation step according to a predetermined program.

5. Device according to claim 4, characterized in that the surgical robot (24) is configured to work within a limited preset volume in the area to be operated on and represented by the updated first image data.

6. Device according to claim 4 or 5, characterized in that the surgical robot (24) is configured to maintain a predetermined distance to a predetermined boundary surface in the area to be operated on and represented by the updated first image data.

7. Device according to one of the claims 4 to 6, characterized in that the surgical robot (24) is configured to move to a predetermined point within the area to be operated on and represented by the updated first image data.

8. Device according to one of the claims 4 to 7, characterized by a device for inputting the limitation volume, the boundary surface, and/or the target point.

9. Device according to one of the preceding claims, characterized by a calibration device (14) which can be fixedly mounted on the body and which has at least one landmark which, with respect to the body provides a fixed, common reference point for the first and the second image data.

10. Device according to claim 9, characterized in that the calibration device (14) is formed by a stereotactic frame.

11. Device according to one of the preceding claims, characterized in that the first image data have been obtained by way of computer tomography and/or magnetic resonance imaging.

12. Device according to one of the preceding claims, characterized in that the image-generating device (20) works by ultrasound for obtaining second image data.

13. Method for generating an image of a human or animal body, comprising the following steps:

- storing first image data of the body;
- acquiring second image data of the body at a first and at a second point in time, the second point in time being after the first point in time;
- comparing the second image data, recorded at the first point in time and the second point in time, with one another;
- updating the first image data corresponding to the change resulting from the comparison; and
- displaying the updated first image data.

14. Method according to claim 13, characterized in that the first point in time and the position of the body during acquiring of the second image data are selected such that the second image data

acquired at the first point in time correspond to the stored first image data.

15. Method according to claim 13 or 14, characterized in that the step of updating is performed in predetermined time intervals.

16. Method according to claim 13 or 14, characterized in that the step of updating is performed every time when the changes resulting from the comparison surpass a predetermined limit.

17. Method according to one of the claims 13 to 16, characterized in that the first image data have been obtained by way of computer tomography or magnetic resonance imaging.

18. Method according to one of the claims 13 to 17, characterized in that the second image data are recorded by means of ultrasound.